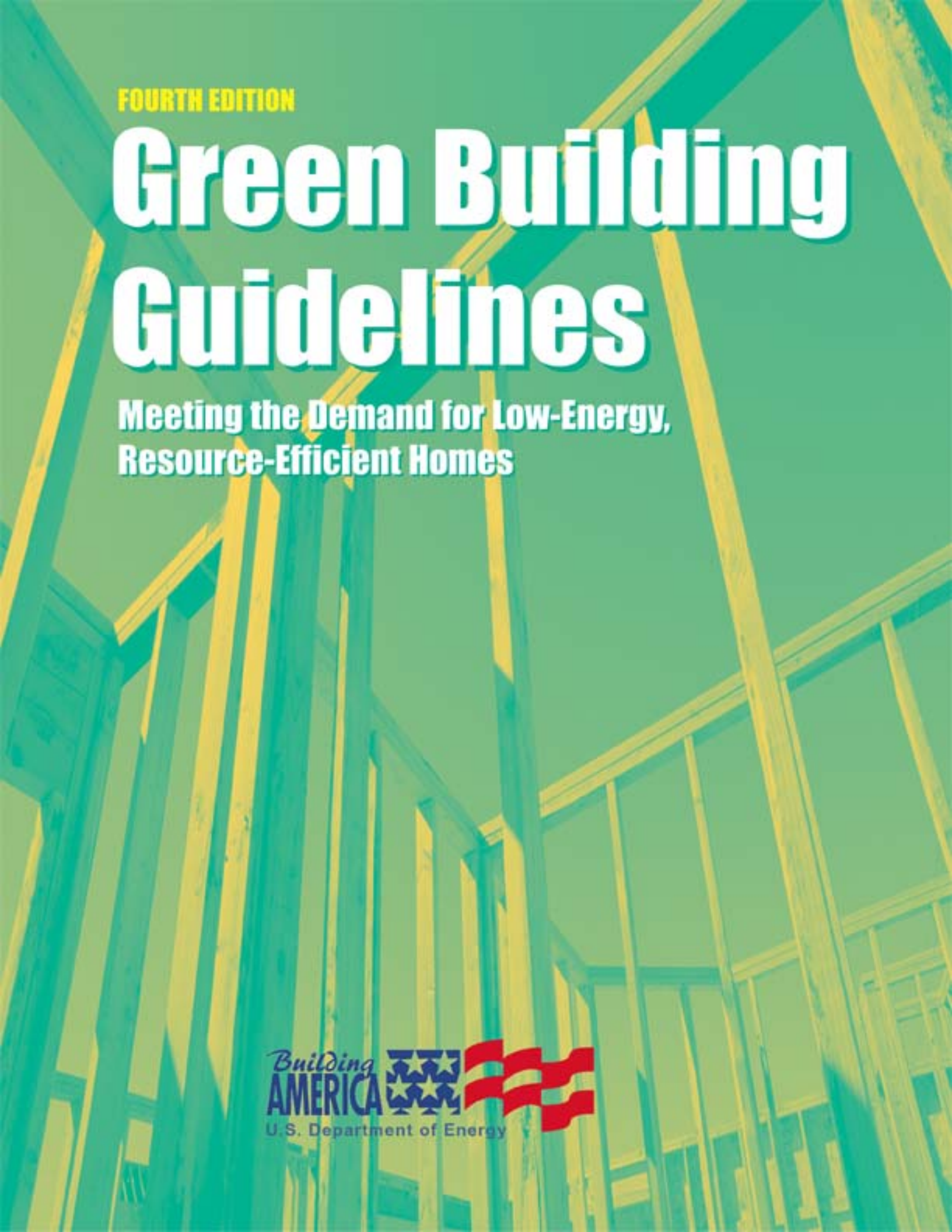
FOURTH EDITION

Green Building Guidelines

Meeting the Demand for Low-Energy, Resource-Efficient Homes



Building AMERICA

U.S. Department of Energy

Foreword

How we choose to shelter ourselves has an enormous impact on our resources. The millions of homes built every year require a combination of wood, concrete, glass, metal, and other products. These residential buildings consume approximately 20% of America's energy every year thereafter in the form of energy consumption and maintenance needs. But our homes need not be so energy- and resource-intensive. Applying no-cost and low-cost design principles can lower the energy consumption of future housing stock by 30-50%. By applying a whole building approach in the design and development of homes, improved comfort, water-efficiency savings, improved indoor environmental quality, and a more material-efficient home can be realized. The *Green Building Guidelines*, created by home builders for home builders, can help achieve these goals.

The development of the *Green Building Guidelines* has been a collaborative effort of a number of builders, some of whom are members of the National Association of Home Builders, as well as representatives from across the residential buildings industry. The Sustainable Buildings Industry Council members and staff provided the framework with technical support from the U.S. Department of Energy's Office of Building Technology and the U.S. DOE's Building America Program.

The *Guidelines* is a reference manual which will enable builders to easily locate general information. The content of each chapter is presented in such a way that someone new to a topic will be able to understand the concept. Within each chapter, there are also many valuable design and construction tips for more experienced green builders, not to mention numerous references for those seeking truly detailed information on a topic. This approach recognizes that there are many shades of green as well as thresholds for energy-efficient design strategies. Whether or not they are cost-effective, practical, and attractive enough to offer a market advantage to any individual builder depends on specific factors such as local costs, climate, and market characteristics. This is ultimately a decision made by builders, often with their clients, during the design and development stages of each project. The *Guidelines* will be a particularly helpful tool during the early stages and in negotiations with subcontractors, suppliers, developers, and business partners. The materials, presentation of concepts, rules of thumb, checklists, graphics, and other information in this manual will better enable you to achieve the goal of designing and building energy- and resource-efficient homes.

A unique feature of the *Guidelines* is that it is based on whole building design principles and an integrated approach to energy management rooted in passive solar design concepts. A whole building design approach looks at materials, systems, and assemblies from many different perspectives. The design is evaluated for cost, quality-of-life, future flexibility, ease of maintenance, energy- and resource-efficiency, overall environmental impact, productivity, creativity, and ways the occupants will be enriched and enlivened by their surroundings. The whole building approach is intended to broaden your perspective to observe the "ripple effect"—the interrelatedness of all elements of the home.

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About SBIC

The Sustainable Buildings Industry Council (SBIC) is an independent, nonprofit organization whose mission is to advance the design, affordability, energy performance, and environmental soundness of America's buildings. As the foremost national resource for passive solar and climate-responsive design and product information, SBIC offers professional training, consumer education, and analysis tools. The Council provides accurate, easy-to-read guidelines, software, and general information about energy conservation measures, energy-efficient equipment and appliances, daylighting, and passive solar architecture.

Formed in 1980, SBIC represents a unique partnership of leading trade associations, product manufacturers, and professionals within the building industry. From the outset, SBIC has pursued strong partnerships with the U.S. Department of Energy's Office of Building Technology, Office of Federal Energy Management Programs, and the National Renewable Energy Laboratory to develop its products and services. SBIC resources help its members create aesthetically pleasing, cost-effective, and sustainable buildings.

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